**Describing & Explaining shapes and polarity (Level 3) examiners tips: Read these please!**

To describe and explain **shape of a molecule** you must state, describe and explain the following in your answer

• firstly, locate and name the central atom

• state the number of regions of negative charge (or electron repulsion) around the central atom

• describe the number of bonding pairs and lone pairs around this central atom

• in order to minimise repulsion these (insert number of) regions of negative charge (or electron density) separate from each other as far apart as possible

*(you absolutely must refer to those repulsions)*

• state the molecular shape and bond angles

To describe and explain **polarity of a molecule** you must state, describe and explain the following in your answer

• **1st**: state whether the molecule does or does not contain “polar bond(s)

***NO*** *polar bond(s);*

“*the atoms in the molecule have the same electronegativity, which means the pair of electrons in each covalent bond are attracted equally to both atoms”*

***YES*** *polar bond(s);*

then describe the bond polarity in terms of the difference in “electronegativity” of the atoms in the molecule, indicate with a \delta- and \delta+ sign on the relevant atoms, state *eg. within a water molecule, the O atom is \delta- (dipole negative) because O is more electronegative than H, so the H atoms*

*are \delta+ (dipole positive). A higher electronegativity means that the pair of electrons in each covalent bond are more strongly attracted to the O atom compared to the H atom.*

• **2nd**: looking at the central atom state the “shape” and number of “lone pairs” (if any) of the molecule

• **3rd:** whether the molecule has “an even/symmetrical distribution of charge” or not as the case may be

• **4th:** describe whether the bond dipoles or polar covalent bonds “cancel” or “do not cancel”

• **finally**...an overall statement re polarity of the molecule...

*eg “Non-polar molecules have no dipole* or *polar bond present in the molecule* or *the spread of charge is even”*

*eg. “Molecules are polar if there is an uneven distribution of charge within the molecule”*

To achieve with an Excellence in this answer you must discuss fully the factors that affect the shape AND polarity of molecules

**Also…”don’t be daft”**

don’t write about maximum repulsion, write in terms of MINIMUM repulsion between pairs of electrons

emphasise that the POLAR bonds do/do not cancel, not just bonds

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